



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/701,848	11/05/2003	Bindu Rama Rao	14319US02	7791
23446	7590	10/05/2004	EXAMINER	
MCANDREWS HELD & MALLOY, LTD 500 WEST MADISON STREET SUITE 3400 CHICAGO, IL 60661			YIGDALL, MICHAEL J	
			ART UNIT	PAPER NUMBER
			2122	

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/701,848	Applicant(s) RAO ET AL.	
	Examiner Michael J. Yigdal	Art Unit 2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/6/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-22 are pending and have been examined. The priority date considered for the application is November 5, 2002.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-6, 8, 9, 11-14 and 16-22 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Pub. No. 2004/0015952 to Lajoie et al. (hereinafter “Lajoie”).

With respect to claim 1, Lajoie discloses a system that facilitates updating of firmware in an electronic device with a file system (see the abstract, and the file system illustrated within non-volatile memory 210 in FIG. 2), the system comprising:

an electronic device comprising (see the electronic device illustrated in FIG. 2):

(a) at least one of volatile and non-volatile memory (see non-volatile memory 210 and RAM or volatile memory 280 in FIG. 2);

(b) loader software that supports a plurality of loaders (see firmware integrity checker 350 in FIG. 3; paragraph 0038, lines 1-10, which shows that the firmware integrity checker functions as loader software; and paragraph 0039, lines 5-9, which shows that the firmware

Art Unit: 2122

integrity checker supports transferring control to or loading both the application program and the upgrade program);

(c) update software that supports retrieving information for updating firmware in the electronic device (see upgrade program 320 in FIG. 3, and paragraph 0031, lines 1-4, which shows that the upgrade program retrieves information for updating the firmware); and

(d) communication software that administers communicating the information for updating firmware from a server (see communication protocol stack 330 in FIG. 3, and paragraph 0033, lines 16-18, which shows communicating with a server).

With respect to claim 2, Lajoie further discloses the limitation wherein the system further comprises a driver software that communicates, to the updating software, information about retrieved information for updating firmware in the electronic device (see paragraph 0033, lines 11-16 and paragraph 0042, lines 1-4, which show that the application program functions as driver software to transfer requests to the upgrade program, i.e. to communicate information to upgrade program regarding the information for updating the firmware).

With respect to claim 3, Lajoie further discloses the limitation wherein the server is an external system (see upgrade server 110 in FIG. 1).

With respect to claim 4, Lajoie further disclose the limitation wherein the server is a local file system (see paragraph 0031, lines 20-23, which shows upgrading the firmware locally).

With respect to claim 5, Lajoie further discloses the limitation wherein the update software comprises:

Art Unit: 2122

(a) loading software that retrieves updating information from the server (see paragraph 0031, lines 1-4, which shows retrieving information from the server for updating the firmware);

(b) updating software that applies the retrieved information for updating firmware in the electronic device (see paragraph 0034, lines 1-4, which shows applying the information and thereby updating the firmware);

(c) security software that supports secure communication between the server and the electronic device (see paragraph 0041, lines 5-9, which shows encryption means for supporting secure communication);

(d) setting software that sets values of data to indicate information about the information for updating firmware (see paragraph 0034, lines 4-8, which shows setting values in a header to indicate information about the information for updating the firmware); and

(e) memory management software that manages accessing and manipulating information in the memory (see paragraph 0026, lines 12-14, which shows a library of memory management functions for accessing and manipulating information in the memory).

With respect to claim 6, Lajoie further discloses the limitation wherein the update software further comprises a reference comprising at least one parameter related to the information for updating firmware (see paragraph 0029, lines 1-4 and Table 1, which show parameters in the header related to the information for updating the firmware).

With respect to claim 8, Lajoie further discloses the limitation wherein the at least one parameter comprises an address referencing the information for updating firmware (see paragraph 0029, Table 1, which shows an application end page parameter that references the

Art Unit: 2122

information for updating the firmware, and paragraph 0028, lines 1-13, which shows that the page numbers correspond to addresses in the memory).

With respect to claim 9, Lajoie further discloses the limitation wherein the at least one parameter comprises an address referencing a backup section (see paragraph 0029, Table 1, which shows a last page parameter; paragraph 0044, lines 10-14, which shows that the last page parameter is a backup means for recovering from a communication failure; and paragraph 0028, lines 1-13, which shows that the page numbers correspond to addresses in the memory).

With respect to claim 11, Lajoie further discloses the limitation wherein the security software controls information in the electronic device, wherein the information indicates whether the firmware in the electronic device needs updating (see paragraph 0038, lines 1-10 and paragraph 0039, lines 5-9, which shows the firmware integrity checker serving as security software for indicating whether the firmware needs to be updated).

With respect to claim 12, Lajoie further discloses the limitation wherein the security software utilizes the setting software to set the value of the at least one parameter (see paragraph 0038, lines 11-15, which shows storing or setting the client state parameter in the header).

With respect to claim 13, Lajoie further discloses the limitation wherein the updating software uses the reference to determine whether the firmware in the electronic device needs updating (see the flowchart illustrated in FIG. 5, which shows using the client state reference to determine whether the firmware needs to be updated).

With respect to claim 14, Lajoie further discloses the limitation wherein the updating software uses the reference to determine the location of the information for updating firmware (see paragraph 0034, lines 4-8, which shows using the header to determine the length or location of the information for updating the firmware).

With respect to claim 16, Lajoie discloses a method for updating firmware in an electronic device with a file system (see the abstract, and the file system illustrated within non-volatile memory 210 in FIG. 2), the method comprising:

- (a) downloading information for updating firmware in the electronic device from a server (see paragraph 0034, lines 1-4, which shows downloading information from a server for updating the firmware);

- (b) saving the downloaded information for updating firmware in the file system (see paragraph 0034, lines 1-4, which shows saving the information in an area of the file system);

- (c) storing a location in the file system of the saved information for updating firmware to a memory reference (see paragraph 0034, lines 4-8, which shows storing a header comprising a location of the saved information); and

- (d) determining whether the firmware needs to be updated when the electronic device reboots (see the flowchart illustrated in FIG. 5, which shows determining whether the firmware needs to be updated when the device is reset or reboots).

With respect to claim 17, Lajoie further discloses the limitation wherein, if it is determined that the firmware does not need updating, the method further comprises a normal

Art Unit: 2122

start up of the electronic device (see the flowchart illustrated in FIG. 5, which shows switching to the application, i.e. starting the device normally, if the firmware does not need to be updated).

With respect to claim 18, Lajoie further discloses the limitation wherein, if it is determined that the firmware does need updating, the method further comprises:

(a) retrieving the reference to the information for updating firmware from the memory (see paragraph 0034, lines 4-8, which shows retrieving from memory the length or reference to the information for updating the firmware); and

(b) updating the firmware using the information for updating firmware (see paragraph 0034, lines 1-4, which shows updating the firmware with the information).

With respect to claim 19, Lajoie further discloses the limitation wherein the method further comprises communicating a confirmation of the updating of the firmware to the server (see paragraph 0043, lines 1-7 and Table 4, which show communicating a confirmation to the server of updating the firmware).

With respect to claim 20, Lajoie further discloses the limitation wherein the method further comprises testing the updated firmware for errors (see paragraph 0031, lines 8-14, which shows testing the updated firmware for errors).

With respect to claim 21, Lajoie further discloses the limitation wherein the method further comprises communicating any errors found to the server (see paragraph 0031, lines 17-20, which shows communicating a message to the server if errors are found).

Art Unit: 2122

With respect to claim 22, Lajoie further discloses the limitation wherein the electronic device retrieves status information from the information for updating firmware via the memory reference to determine whether the firmware needs to be updated using the information for updating firmware (see the flowchart illustrated in FIG. 5, which shows determining from the client state, i.e. status information, whether the firmware needs to be updated).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7, 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lajoie, as applied to claims 1 and 6 above, respectively.

With respect to claim 7, Lajoie further discloses the limitation wherein the at least one parameter comprises a state flag (see paragraph 0029, lines 1-4 and Table 1, which show a 1-byte client state variable or flag).

Although the state flag taught by Lajoie has a size of 1 byte, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the flag with a size of 4 bytes, as recited in the claim. It is well known in the art that 1 byte of information, such as the state flag of Lajoie, can be equivalently represented within a 4-byte space.

With respect to claim 10, Lajoie further discloses the limitation wherein the at least one parameter comprises a CRC value (see paragraph 0039, lines 2-5, which shows a CRC-16 value).

Although the CRC value taught by Lajoie has a size of 16 bits or 2 bytes, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a 4-byte CRC value, as recited in the claim. It is well known in the art that a 4-byte CRC value can be used to provide greater error detection reliability than a 2-byte CRC value.

With respect to claim 15, although Lajoie discloses downloading information from the server for updating the firmware (see paragraph 0034, lines 1-4), Lajoie does not expressly disclose the limitation wherein the update software utilizes a uniform resource locator (URL) to download information for updating firmware from the server.

However, Lajoie further discloses that the server downloads the information for updating the firmware from a firmware provider over an Internet connection (see paragraph 0022, lines 5-7 and paragraph 0023, lines 1-5). It is well known in the art that an addressing or locating means, such as a uniform resource locator, is necessary in order to download such information over an Internet connection.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the update software taught by Lajoie to download the information for updating the firmware by way of an Internet connection, as also taught by Lajoie, and accordingly, to use a URL in order to locate the resources to download.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. U.S. Pub. No. 2002/0073304 to Marsh et al. discloses a system and method for updating firmware. U.S. Pat. No. 6,640,334 to Rasmussen discloses a method and apparatus for remotely updating firmware of a communication device. U.S. Pat. No. 6,601,212 to Guha et al. discloses a method and apparatus for downloading firmware to a non-volatile memory.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Yigdall whose telephone number is (703) 305-0352. The examiner can normally be reached on Monday through Friday from 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (703) 305-4552. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

After October 25, 2004, the examiner can be reached at (571) 272-3707, and the examiner's supervisor, Tuan Q. Dam can be reached at (571) 272-3694.

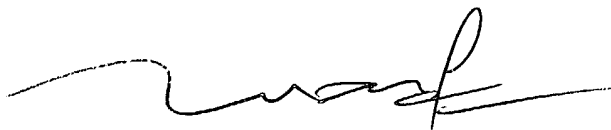
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 2122

MY

Michael J. Yigdall
Examiner
Art Unit 2122

mjy

A handwritten signature in black ink, appearing to read 'Tuan Dam', with a long horizontal flourish extending to the right.

TUAN DAM
SUPERVISORY PATENT EXAMINER